

## NOTES ON COSTA RICAN BIRDS.

BY

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The present notes are based on the remainder of the collection from which the new species were described in a former paper in these Proceedings,\* and is really a continuation of that paper. I have, however, added some few notes from observations made on birds in the Costa Rica National Museum since my return.

I would here express my thanks to the authorities of the Smithsonian Institution for the opportunity of examining their bird collection in comparison with Costa Rica examples, and also acknowledge my indebtedness to Mr. Ridgway and Dr. Stejneger for much kindly assistance.

### *Catharus melpomene.*

In a series of twenty-seven adult birds of this species, fifteen from the vicinity of San José, five from various other localities in Costa Rica, and seven from Guatemala and Mexico, no differences due to locality, age, season, or sex are observable that have not already been noted by various writers.

### *Catharus mexicanus.*

I have before me a single specimen, a young male *Catharus*, which, although Mr. Ridgway has separated the Costa Rica bird (or a form of it) as *fumosus*, I believe is *mexicanus*, having the wings and tail "dusky brown with bistre brown edgings," and many feathers of the back with a decided brownish cast.

The specimen (No. 636, Museo Nacional de Costa Rica, Jiménez, August 4, 1886, A. Alfaro) may be described as follows:

Above brownish olive, head slightly darker, feathers blackish basally, and having narrow ochraceous shaft-streaks. Scapulars with sub-terminal elliptical ochraceous shaft-spots, feathers, narrowly tipped with blackish. Greater coverts dusky brownish with bistre edges, somewhat brighter than on the quills. Many of the feathers of the back with a decided Vandyke-brown shading. Tips of upper tail-coverts Vandyke-brownish. Tail like the wing. Below, feathers of the

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\* Vol. XIV, pp. 337-346.

throat ochraceous-buffy with whitish bases and narrowly tipped with blackish. Breast olivaceous, becoming grayish or ashy posteriorly. Feathers of the center of the breast with large central ochraceous-buff spots surrounded with narrow blackish lines and the feathers edged with olivaceous; sides smoky gray with olive wash; center of belly almost pure white, only a few feathers anteriorly with subterminal buffy tips and dusky edges. Under tail-coverts pale buffy.

There are no specimens of *C. mexicanus* in the U. S. National Museum collection and only the type of *C. fumosus*.

*Campylorhynchus capistratus*.

Two specimens (No. 19, ♀, Museo Nacional de Costa Rica, San Mateo, January, 1886, A. Alfaro; and No. 18, ♂, Trojas, February, 1886, A. Alfaro), compared with Mr. Ridgway's type of *C. castaneus* and six examples of *C. capistratus* in the U. S. National Museum (two from Sucuná, Nicaragua, one from San Juan del Sur, one from La Palma, and one from Punta Arenas, Costa Rica) seem to be nearer the former than the latter in the lighter almost uniform chestnut of the back and less conspicuous spots and streaks of black and white. No. 18 corresponds very closely in size to *castaneus*, while No. 19 is larger; as large as other specimens of *capistratus*.

Female examples in the Costa Rica National Museum seem to have the streaking and spotting of the back a little less pronounced than in the males.

*Henicorhina prosthaleuca*.

Mr. Zeledon gives in his list *H. leucosticta* as a Costa Rica bird. However this form probably does not occur in Costa Rica, as the name *leucosticta* is applicable to the black-headed form, which occurs only as far north as Colombia, its place in Central America being taken by *H. prosthaleuca*. (See Catalogue Birds Brit. Mus., Vol. VI, pp. 286-288.)

*Henicorhina leucophrys*.

I have before me two skins from the Costa Rica National Museum. No. 2300, ♂, (Volcan de Poás, November 23, 1888, A. Alfaro), agrees closely with descriptions of the species, and also with ten examples in the U. S. National Museum, from Mexico, Guatemala, Costa Rica, Veragua, and Bogota. There are, however, four of the examples from Costa Rica in the U. S. National Museum collection which seem to present some peculiarities or characters which may be variations due to their geographical position. The local variations in the species as compared with Costa Rican examples can best be pointed out by making extracts from Mr. Ridgway's manuscript on the subject, which I have before me. The Costa Rica birds "come nearest to the Guatemala specimens, but are somewhat lighter and brighter brown above." Mexican specimens "have the entire pileum and hind neck exactly the same color as the back, except along the lateral margin, where a black line

borders the white superciliary stripe;" the rest of the upper parts are "almost exactly as in specimens from Costa Rica." Costa Rican and Veragnan specimens have "the feathers of the throat distinctly edged with dusky, producing streaks."

The second skin from the Costa Rica National Museum differs so much from other examples that I append a description. More material might prove it to be distinct.

No. 2299, ♀, Collection Museo Nacional de Costa Rica, El Achiote, Costa Rica, November 22, 1888, A. Alfaro. Above similar to other Costa Rica examples of *H. leucophrys*, but with the entire head uniform, dusky black, almost imperceptibly tinged with olive. Frontal feathers white, but more of a yellowish hue than in the narrow white superciliary stripe. Lores and a stripe extending through the eye black. Sides of the face and neck white, streaked with black; the feathers white, having black edges. The back is chestnut-brown, brighter on rump and upper tail-coverts, washed with olive on the upper back; wing-coverts same color as the back; quills dusky blackish, outer webs like the back, barred with blackish, the bars or mottling extending across the inner secondaries. The outer primary is edged with white on the outer web. Tail dusky brownish black, barred irregularly with black. Throat white, feathers with indistinct dusky edgings; foreneck and breast ash-gray, lighter on the lower breast, and distinctly barred with blackish. Sides, flanks, belly, and crissum light rufous-chestnut; the under tail coverts, however, barred with black.

Since returning to Costa Rica I find in the collection of the Museo Nacional another specimen, with head uniform dusky black and the lower breast ash-gray barred with blackish, also having the under-tail coverts barred with blackish; otherwise there is no difference from other Costa Rica examples; and being taken at the same time and in the same place with normal examples, I now conclude it is only a peculiar phase of plumage.

*Thryophilus rufalbus castanonotus.*

Five adult specimens before me are typical of the sub-species, by comparison with the type. No. 2067, Museo Nacional de Costa Rica, is a young bird evidently not long from the nest and differs from descriptions of young only in having the under-tail coverts faintly barred with blackish.

*Thryophilus costaricensis.*

A comparison of three specimens from the Museo Nacional de Costa Rica with six other examples from Costa Rica, and one from Nicaragua (Los Sábalo) in the U. S. National Museum, with five Panama specimens of *castaneus*, leaves no doubt as to there being well defined races if not species. The Costa Rica specimens are all a bright uniform chestnut below, while the Panama examples are orange-rufous conspicuously

barred on the sides and flanks with blackish; also, as pointed out by Mr. Sharpe (Col. Birds Brit. Mus., VI, p. 217), the white on the throat in Costa Rican birds "is confined to the throat itself and not extending to the fore-neck." In the series before me there are no intermediate or connecting forms. However, Nos. 47386, 64697, and 116552, from Costa Rica, and No. 91145, Los Sábalos, Nicaragua, in the U. S. National Museum series, do present a few ill-defined blackish bars on the flanks. The last specimen is a young bird with the under surface slightly paler chestnut than in the adult. There is also a female example in the Costa Rica National Museum collection (No. 3352, Jiménez, August 18, 1888), with a few blackish bars in the center of the belly.

*Thryophilus thoracicus.*

Out of a series of seventeen specimens examined, eleven from the U. S. National Museum collection and six from the collection of the Costa Rica National Museum, only one presented the upper tail-coverts obscurely barred with blackish as indicated by Mr. Sharpe (Vol. VI, Cat. Birds Brit. Mus., p. 215); with that one exception all have the upper tail-coverts unicolored, without sign of bars.

*Thryophilus modestus.*

The throat and breast of young birds of this species are far more of an ashy white than in the adult form; and the sides, flanks, and crissum are a soft buff, much paler than in the adult.

In a series of twenty-three Costa Rican birds no peculiarities are noticeable that are not to be found in the Guatemala bird; while no intermediate forms are found grading into the Panama *T. galbraithi*.

For further notes on this species see the author's list of birds of San José, Costa Rica, in *The Auk*, July, 1891, p. 275.

*Thryophilus zeledoni.*

A comparison of seven of these birds with the series of twenty-three *T. modestus* from Costa Rica only goes to point out more conclusively their specific distinctness. Not only is the great difference in size constant, but also the color; no intermediate birds are found.

*Thryophilus semibadius.*

Four specimens, two males and two females, from Pozo Azul, Costa Rica (Nos. 919, 920, 921, and 922, Museo Nacional de Costa Rica), agree very closely with the descriptions of the type specimen as given by Mr. Sharpe, and also as given by Salvin and Godman. Yet from the material before me I conclude the description is drawn from a bird not altogether mature. However, the type comes from Panama and the differences pointed out below may be confined to a more northern race of the bird.

No. 919 (October 20, 1883, ♀), I take to be a bird of the year. The chestnut above is softer than in other examples; the wing-coverts, greater, middle and lesser series all being blackish, edged (or better, perhaps, mottled), especially on the outer web, with pale or rufous chestnut, paler than the back; primary coverts edged with the same color; primaries and secondaries blackish brown, secondaries the darker; first two primaries edged (not notched) with whitish, third edged and slightly notched, the remaining primaries and the secondaries barred with rufous-chestnut, the bars extending across the inner secondaries. The throat is ashy white, scarcely immaculate. No. 921 (♂ January, 1887) has some of the middle and lesser coverts barred with white; also the primary coverts notched and edged with fulvous-whitish; greater coverts like in the preceding example. Primaries and secondaries barred, commencing with whitish on the outer primaries and growing darker until on the inner secondaries it is rufous-chestnut. In this specimen the scapulars are barred with black, the bars, however, almost entirely concealed. The bars are well defined, much better so than the bars on the upper tail-coverts. These bars are to be seen more or less clearly defined on all of the specimens before me. No. 922 (♀ January, 1887), has all the wing-coverts barred with whitish; the primary coverts are brownish dusky, faintly edged and notched on outer webs with rufous and whitish, the white predominating. In all the specimens before me I would call the under surface of the quills dusky edged on inner webs with buffy ash, not, as Mr. Sharpe says, "Quills dusky brown below, ash brown along the edge of the inner web."

#### *Thryothorus hyperythrus.*

In a single specimen in the author's collection from the Pacific side of Costa Rica, the orange-rufous of the under parts is slightly paler than in an example from Santa Fé, Veragua, and slightly darker than one from Colovevora, Veragua. In each of these examples there is just a perceptible lightening in color in the center of the belly. Arranging the three specimens spoken of above with three others, one from Panama and two from Tobago,\* there is an unbroken series, the center of the belly growing lighter until the last, Nos. 74892 and 82728, U. S. National Museum, where the center of the belly is white. In this example neither is the light rufous-brown of the head so light, nor does it extend so far back as in northern specimens.

#### *Thryothorus melanogaster.*

Male (No. 908, Museo Nacional de Costa Rica, Pozo Azul, Pirris, December 8, 1885; José C. Zeledon):

According to Mr. Sharpe *T. fasciiventris* does not occur in Costa Rica, its place there being taken by *T. melanogaster* (Cat. of Birds, Brit. Mus., Vol. VI, pp. 230, 231), an opinion in which I now fully concur.

\*These Tobago specimens are not *T. hyperythrus*, but *T. rutilus* Vieill.—R. R.

However, in making a comparison of the specimens with Mr. Sharpe's descriptions and with the other specimens in the National Museum collection, I was much puzzled, not only in regard to the Costa Rica example, but also with examples of the species (in a comprehensive sense) from Veragua, Panama, and Santa Marta, Colombia. Mr. Ridgway has greatly aided in making clear the comparative differences in placing at my disposition his unpublished manuscript and published notes on the very birds I have before me. In an article published in the Proceedings of the Boston Society of Natural History, Mr. Ridgway points out the difference between the type of *T. fasciiventris* and the Santa Marta specimen as being greater than that between the latter and the Panama specimens, and equivalent to the resemblance between Panama and Santa Marta examples as compared with Costa Rican and Veraguan specimens. Mr. Ridgway then says: "*T. melanogaster* may, however, be distinguished by the pale rusty brownish, instead of white bars on the under tail-coverts, and much less distinct (sometimes quite obsolete) bars on the sides, flanks, and abdomen." Then "there can be no question, however, that this form grades directly into the Panama form, which in all probability is only a local race of *fasciiventris*."

With this latter view I can hardly agree, there being other differences overlooked by Mr. Ridgway that seem to me to very clearly separate the birds as species. These differences consist in the Costa Rican and Veraguan specimens having a rufous tail (somewhat paler than the back) barred with black; whereas the Santa Marta and Panama birds and type of *fasciiventris* have the tail dusky, narrowly banded with pale fulvous (Ridgway MSS). Also the bands on the upper tail-coverts, primaries, and secondaries in the Costa Rican and Veraguan specimens are obsolete or barely perceptible, to be seen only in certain lights. In the Panama and Santa Marta examples these bands are very distinct; not so distinct, however, in the type of *T. fasciiventris*.

As Mr. Sharpe's descriptions of *T. fasciiventris* and *T. melanogaster* appear to me somewhat faulty and misleading, I will present here, from Mr. Ridgway's manuscript, descriptions of the type of *T. fasciiventris* and a Costa Rican example of *T. melanogaster*:

**Thryothorus fasciiventris.**

SP. CHAR.—Adult (Type, No. 2658, Lafresnaye Coll., "Bogota"): "Above light Vandyke-brown, somewhat tinged with russet (lighter and much duller than in No. 34095, U. S. Nat. Mus., from Sta. Marta), the pileum decidedly duller (the feathers much worn, however); \* secondaries without the faintest indications of bars, and edges of primaries with only the slightest possible suggestion of bars, discernible only on the closest inspection; tail dusky, narrowly banded with pale fulvous, the bars confined to outer webs (where extending to shafts), the inner webs, even of

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\* A few scattered feathers, evidently of newer growth, are very similar in color to those of the back.

middle feathers, almost wholly uniform dusky. A narrow white superciliary stripe, and beneath this a transocular stripe (about 0.10 to 0.15 wide), occupying lores and upper portion of auriculars, similar in color to the pileum. Chin, throat, chest, and sides of head up to the brown transocular stripe, immaculate, pure white; rest of lower parts dull, blackish dusky, tinged with brown (especially on flanks and upper breast), and everywhere barred with white, these white bars rather narrower and more tinged with brown on upper part of breast, the lateral portions of which are less distinctly barred; thighs light brown with very indistinct narrow darker bars on inner side. Length (mounted specimen), about 5.60; wing, 2.55; tail, 2.10; exposed culmen, 0.70; bill from nostril, 0.48; depth at anterior end of nostril, 0.17; tarsus, 0.90."

"This specimen, which is an adult in considerably worn plumage, differs from the only other Colombian example that I have seen (No. 34095, U. S. Nat. Mus., ♂ ad., Sta. Marta), and also from descriptions, in having the entire breast barred with white, there being no uniform black band or space between the barred portion and the pure white chest; the upper parts are a *much* lighter and much duller brown, but this may be due to the worn condition of the plumage. It is also smaller, the Sta. Marta specimen measuring as follows: Length (skin), 6; wing, 2.75; tail, 2.20; exposed culmen, 0.70; bill from nostril, 0.52; depth at anterior end of nostril, 0.20; tarsus, 0.95."

*Thryothorus melanogaster.*

"Adult male (No. 908, Collection Museo Nacional de Costa Rica, Pozo Azul (Pirris), Costa Rica, Dec. 8, 1885, José C. Zeledon): Pileum dull sepia-brown, tinged with brighter brown; hind neck similar but brighter, passing into chestnut on back, scapulars, wing-coverts, rump (where lighter and brighter), and upper tail-coverts; the last, and the greater wing-coverts, very indistinctly (hardly perceptibly) barred with darker; remiges dusky, but the prevailing color of their exposed surface (edges) dull chestnut-brown, very indistinctly barred with dusky; tail clear chestnut, distinctly barred with black, the black bars averaging about 0.07 to 0.08 wide and considerably narrower than the interspaces, except an inner web. Lores and a narrow, indistinct superciliary stripe, grayish white; upper half of ear-coverts dusky, lower portion white, streaked with grayish dusky. Chin, throat, and chest pure white, the last with a small dusky spot (consisting of parts of only two or three feathers each) near each side; \* breast, upper belly, and anterior portion of sides plain black, tinged posteriorly with grayish brown, the feathers light bluish gray basally; sides of breast tinged with chestnut; belly blackish, distinctly and regularly though narrowly barred with brownish white; under tail-coverts similar but bars

\* Perhaps abnormal markings, not found in other specimens.

more decidedly brownish; flanks transversely mottled or indistinctly barred with dusky and pale brownish; thighs plain, light brown on lower portion, upper part barred with dusky. Upper mandible black, edged with paler; lower mandible light bluish gray or plumbeous; iris brown; feet dusky; length (skin), 6.10; wing, 2.85; tail, 2.65; exposed culmen, 0.70; tarsus, 0.98."

No. 42808 (U. S. National Museum Collection, San Mateo, Costa Rica, April, 1866, J. Cooper), has the under surface dull rufous-brown shaded with dusky ash centrally and the bands are of a more rufous shade. Also the upper surface is somewhat duller rufous, the head differing very little from the back. The lower mandible is plumbeous.

*Oreothlypis gutturalis.*

Young (No. 2116, Collection Museo Nacional de Costa Rica, Volcan de Poás, July 27, 1888, A. Alfaro): Evidently a bird not long from the nest. Above a trifle paler gray than in the adult female, but with the black patch on the back just as well marked. Below, the throat and breast are buffy with a brownish shade (almost the clay-color of Ridgway's "Nomenclature of colors.") Rest of lower parts ashy grayish, paler, almost whitish, in the center of the belly.

*Dendroica vieilloti.*

A series of four birds from the Pacific side of Costa Rica (Punta Arenas) and eleven from the Atlantic side (Porto Limon) belonging to the *D. vieilloti* group, compared with examples of true *D. vieilloti* and specimens (including the types) of *D. bryanti* and *D. bryanti castaneiceps* have convinced me that the two latter are only subspecifically distinct from *vieilloti*. In both instances the Costa Rican birds seem to furnish the connecting link, although in most characters in both instances they seem to be nearer the northern forms *bryanti* and *castaneiceps* than to true *vieilloti*; to which last form they approach closest in the rich yellow edgings to the wings.

In the type of *D. bryanti* the lower parts with the exception of chin and throat are bright gamboge-yellow (not so bright as in true *vieilloti*), with a few narrow mostly concealed streaks of chestnut-rufous. In other specimens from the same locality the chestnut streaking is decided, but streaks narrow, and not merging into the rufous-chestnut of the throat, which has a sharply defined margin. In Costa Rican examples (from the Atlantic side) the chestnut stripes are much broader (but not so broad as in *vieilloti*) and the margin of the chestnut throat is not well defined, having a tendency to spread itself into the chestnut streaking of the breast, as in *vieilloti*. The shade of rufous-chestnut on the head and throat varies the same degree in the different specimens. There are ten adult males (*D. vieilloti bryanti*) from the Atlantic side; none



of these have the head as dark a chestnut as the birds from the Pacific side (five adult males, including the type of *castaneiceps*.) The type of *castaneiceps* differs from *bryanti*, as shown by Mr. Ridgway, only in the darker chestnut head; like the type of the latter, the jugulum and breast are marked with a few very indistinct and mostly concealed streaks of chestnut-rufous. These streaks in two birds from Mazatlan, Mexico, are very much better defined and broader; in No. 58252, U. S. National Museum, the chestnut throat is sharply defined, the color not extending onto the foreneck; in No. 35017 the chestnut of the throat is not so well defined, and extends more onto the foreneck. In the two Costa Rican examples (Nos. 55 and 2943, Museo Nacional de Costa Rica), the chestnut extends more onto the foreneck and has an ill-defined margin, while the streaks on the jugulum and breast are a trifle wider and brighter than in the Mazatlan examples; not so broad, however, as in birds from the Atlantic side. We may suppose from analogy, I think, that birds from Veragua would come another step nearer *vieilloti*.

With the material I have before me I believe the bird found on the Atlantic side from Mexico to Costa Rica should bear the name *Dendroica vieilloti bryanti* (Ridgway), as it was first separated by Mr. Ridgway; while the birds found on the Pacific side, from Lower California to Costa Rica, would become *Dendroica vieilloti castaneiceps* (Ridgway).

*Castaneiceps* is distinguished from *bryanti* by the darker rich chestnut head, and the stripes on the jugulum and breast usually narrower (in the type almost wanting) and less well defined.

*D. vieilloti* is distinguished from either of the preceding by the broad chestnut stripes on the under parts merging into the chestnut of the throat, which has no definite margin.

Two young males of *D. vieilloti bryanti* just assuming the adult phase are probably deserving of some notice. Their general coloring above is dusky olive-yellow, interspersed with many ashy-gray feathers, crown ashy, with an olive-yellow shading and many chestnut-rufous feathers, especially on the forehead; the edges of the wing are not so bright yellow as in the adult bird; the prevailing color below is cream-color, with here and there a few gamboge-yellow feathers with chestnut streaks, especially on the breast and jugulum. The throat in one is rufous-chestnut, as in the adult; while in the other it is ashy-whitish, with chestnut shading. The adult female has the head dusky olive-yellowish (like the back), strongly shaded with a yellowish rufous; below, the chin, throat, and sides of face are ochre-yellow, with a rufous shading; the remaining lower parts are as in the male, only the chestnut streaking is paler. A young female is olivaceous-ashy above; brighter olive on the rump, and deeper ash on the head. General color below cream-color, grayish along the sides, and the under tail-coverts pale yellowish.

*Geothlypis caninucha icterotis.*

With twenty examples, all from the vicinity of San José, Costa Rica, representing specimens taken in the months from April to December, and the types of *G. poliocephala*, *G. caninucha*, *G. caninucha icterotis*, and *G. palpebralis*, all before me, I thought for some time that I could select from the series of Costa Rican birds specimens that would exactly match any one of the four types; at the same time the gradation from one to the other in the series seemed so gradual as to make them inseparable. I felt convinced that Mr. Sharpe was correct when he placed *caninucha* as a synonym of *poliocephala* (Cat. Birds Brit. Mus., Vol. x, p. 359), but not as had already been pointed out by Mr. Ridgway (Manual of North American Birds, p. 526), that the two forms represent seasonal differences, because in my Costa Rican series, that which Mr. Sharpe would call the winter plumage is to be found in birds from May to August as well as December. The color differences are in my opinion due entirely to individual variation. And, on the other hand, to be convinced that relative measurements have little taxonomic value one has only to glance through the accompanying table of measurements taken from the series of Costa Rican birds.

The above were my hastily formed conclusions, part of which had to be changed on more careful examination of the material, as follows: The type of *poliocephala* is a trifle paler on the belly and anal region than the greater part of the specimens, but it is matched in this respect by at least four examples. The back is, however, a dusky olive-green, with very little indication of the brownish shading so conspicuous in the majority of Costa Rican specimens; and while in many Costa Rican birds there is some white on the eyelids, it does not extend around the eye as in *poliocephala*.

Mr. Ridgway separated the Costa Rican bird as *G. caninucha icterotis* (Proceedings U. S. National Museum, Vol. XI, p. 539), believing it to have olive-yellow or yellowish-olive auriculars, distinguishing it from the Guatemalan specimens. The series of Costa Rican examples presents much variation in the color of auriculars varying from an olive-gray (almost as dark as seen in the type of *caninucha*) to a yellowish olive, similar to the type of *caninucha icterotis*.\*

The specimens on which *poliocephala*, *palpebralis*, *caninucha*, and *caninucha icterotis* were based are, with the exception of the last, in very old, worn, and poor plumage, and I believe a good series from different localities would connect all as races of a single species.

*G. caninucha icterotis* is a common resident bird in the fields about San José, where it breeds abundantly. Its habits are similar to those of the Maryland Yellow-throat (*G. trichas*). It is quite shy and difficult to approach. Specimens are in best plumage from October to March.

\* I would here observe the type of *caninucha icterotis* seems to me to be one with unusually bright auriculars, while the type of *caninucha*, on the other hand, seems to have very dark auriculars. In other words, the birds chosen as types would seem to represent the extremes of color in the two forms.

*Measurements of specimens of Geothlypis caninucha icterotis* Ridgw.

No.	Collector.	Locality.	Date.	Sex.	Wing.	Tail.	Expos'd culmen.	Depth of bill at base.	Tarsus.
541	Geo. K. Cherrie.....	San José..	Apr. 25, 1889	♂	2.08	2.50	0.45	0.20	0.86
575	do.....	do.....	May 11, 1889	♂	2.30	2.64	0.43	0.20	0.86
576	do.....	do.....	do.....	♂	2.14	2.55	0.43	0.21	0.86
610	do.....	do.....	June 2, 1889	♂	2.30	2.66	0.47	0.23	0.92
620	do.....	do.....	June 4, 1889	♂	2.24	2.67	0.47	0.18	0.88
623	do.....	do.....	June 7, 1889	.....	2.16	2.45	0.46	0.22	0.89
634	do.....	do.....	June 11, 1889	♂	2.06	2.59	0.44	0.18	0.87
639	do.....	do.....	June 16, 1889	.....	2.21	2.66	0.45	0.20	0.90
669	do.....	do.....	June 23, 1889	♂	2.25	2.70	0.44	0.20	0.84
702	do.....	do.....	July 9, 1889	♂	2.28	2.56	0.44	0.20	0.85
765	do.....	do.....	Aug. 5, 1889	♂	2.30	2.79	0.45	0.20	0.92
792	do.....	do.....	Aug. 21, 1889	♀	2.14	2.71	0.40	.....	0.84
970	do.....	do.....	do.....	.....	2.18	2.44	0.43	0.18	0.90
971	C. F. Underwood.....	do.....	Oct. 15, 1889	♂	2.14	2.58	0.44	0.19	0.88
972	Geo. K. Cherrie.....	do.....	Nov. 6, 1889	.....	2.39	2.82	0.46	0.22	0.92
1024	do.....	do.....	Dec. 8, 1889	.....	2.29	2.66	0.44	0.18	0.84
1025	do.....	do.....	do.....	♀	2.10	2.58	0.45	0.19	0.88
1268	do.....	do.....	Feb. 5, 1890	♂	2.16	.....	0.44	0.20	0.86
2027*	A. Alfaro.....	do.....	Aug. 15, 1887	♂	2.32	2.28	0.44	0.18	0.86
2028	do.....	do.....	do.....	juv.	2.37	2.68	0.42	0.17	0.86

\* Museo Nacional de Costa Rica.

*Geothlypis bairdi*.

Four specimens compared with Mr. Nutting's three examples in the U. S. National Museum, from Los Sábalo, Nicaragua, are probably inseparable from that form; however, the under parts are brighter yellow and the yellowish olive-green of the sides does not encroach so far on the sides of the breast and the lower parts in general. In addition, in Mr. Nutting's specimens the under tail-coverts are almost exactly the color of the sides, while in mine they are much more yellowish.

The relative measurements, as shown below, are almost the same.

Number.	Collection.	Sex.	Wing.	Tail	Cul- men.	Tarsus.	Depth of bill.	Middle toe with- out claw.
3555	Museo Nacional de Costa Rica.....	♂	2.18	2.10	0.53	0.82	0.20	0.60
4042	do.....	♂	2.28	2.00	0.54	0.87	0.20	0.60
1452	Geo. K. Cherrie collection.....	♂	2.38	2.25	0.56	0.89	0.22	0.61
1817	do.....	♂	2.34	2.17	0.60	0.85	0.21	0.60

## NUTTING'S TYPE SPECIMENS

91151	U. S. National Museum.....	♂	2.28	2.10	0.56	0.80	0.20	.....
91150	do.....	♂	2.28	2.25	0.58	0.84	0.20	.....
91152	do.....	♀	2.17	2.10	0.54	0.84	.....	.....

*Basileuterus delatirii*.

Two young specimens, both from the vicinity of San José, one in the collection of the U. S. National Museum, the other from the collection of the Museo Nacional de Costa Rica, differ from the adult, in being dusky brownish olive above, especially on the upper back and head; the lower back, rump, tail, and wings are more as in the adult. On the head there are no signs of the chestnut crown or white super-

ciliary of the adult; the entire head is dusky brownish olive; the lores are slightly darker; the chin and throat is dusky yellowish olive; the breast is the same color, with more brownish shading; the sides grayish olive; belly and crissum primrose yellow, with a few bright yellow feathers on the sides of the lower breast.

*B. delatirii* is an abundant resident, breeding commonly about San José. For notes on the nest and eggs see *The Auk* for October, 1891.

*Basileuterus melanogenys.*

Young, (No. 30498, U. S. National Museum, Costa Rica): General color above brownish olive, more olivaceous on edges of wing and tail; wing-coverts brownish black edged on outer webs with olive-brownish and tipped with ochraceous-buff, forming two wing-bars. A few chestnut feathers in the center of the crown and a few feathers indicating the black margin to the crown; there is a broad buffy white supra-auricular stripe extending from just above the eye to the nape; the sides of the head are blackish; ear-coverts, chin, and throat are indescribable brownish buffy; breast and chest brownish, with an olive shade, sides darker, center of belly whitish.

*Setophaga aurantiaca.*

A single specimen from the collection of the Costa Rica National Museum is bright orange-yellow below, decidedly brighter than any of the examples in the U. S. National Museum collection, including the type.

*Vireo pallens.*

A single example of this rare vireo taken at Punta Arenas, Costa Rica, (No. 2946, ♀, Museo Nacional de Costa Rica, March 6, 1889, Alfaro and Cherrie), agrees very closely with one of Mr. Salvin's types of the species (that described by Professor Baird in his Review), No. 33601, U. S. National Museum. The upper parts are slightly brighter dull grayish olive, the edges of the quills and tail-feathers are also slightly brighter, the two white bands on the wings are well developed. Beneath there is more of a buffy shade than in the type, and the tibiæ are dusky blackish, not "ashy." The specimen is not in very good condition, and it is hard to make out the characters about the head; but there is a whitish line from the bill and extending above the eye; the lores are dusky, while the front edge of the eyelids is black; the auriculars are darker, more dusky than in the type; the bill is horn color, the feet dusky, and the iris white. It measures length (skin), 4.20; wing, 2.22; tail, 2.06; gonys, 0.28; depth of bill at base, 0.16; width at nostrils, 0.18; tarsus, 0.76; middle toe and claw, 0.58 (the tip of the upper mandible is broken away). The specimen was taken among the mangroves back of the town, probably in about the same sort of locality as the type.

*Hylophilus ochraceiceps.*

A single Guatemalan skin, two from Segovia River, Honduras, three from Costa Rica, and one from Veragua (Chiriqui) all differ from the type from Mexico in being paler below, very few showing the yellowish-brown color of the breast, and almost all with more olive shading on the sides. Above there is more olive shading on the lower back and rump, and the same color is more noticeable on the hind neck. All have the edges of the tail-feathers lighter brown, and basally a perceptible shading of olive not seen in the type; besides, they are slightly smaller in wing and tail measurements.

*Cyclorhis flavipectus subflavescens.*

After a study of the literature on the subject and a careful comparison of a small series of Costa Rican specimens with the different forms of *Cyclorhis* in the U. S. National Museum, including the types of *flavipectus* and *flaviventris yucatanensis*, I am convinced there is only one species found in Costa Rica, and that is *subflavescens*. The Costa Rican bird, *subflavescens*, is separable readily from *flaviventris* or *flaviventris yucatanensis* by the white on the belly, which, even in those specimens with the greatest amount of yellow on the under surface, is distinct. This character is enough to distinguish them, but the Costa Rica bird is decidedly and uniformly brighter olive-green above.

Unfortunately the number of specimens of *flavipectus* is limited to four, two of which are referable to Professor Allen's *flavipectus trinitatis*. I have fifteen Costa Rican specimens. All agree in having the auriculars dark ash-gray, while in *flavipectus* they are pale ash. In addition, the rufous-chestnut superciliary stripe in the Costa Rican examples appears darker and is shorter, not extending to the nape. There are also the differences pointed out by Mr. Allen (Bull. Am. Mus. Nat. Hist., Vol. II, No. 3, p. 131).

*Vireolanus puchellus verticalis.*

Costa Rica examples compared with the type (also from Costa Rica) agree minutely.

*Diglossa plumbea.*

Young birds are brownish olive above, dusky brownish below, with buffy brownish in the center of the belly.

*Dacnis venusta.*

Young males probably resemble the females. A young male (No. 773, Museo Nacional de Costa Rica), just assuming adult plumage, has the forehead black like the adult male, and bright blue feathers are scattered in the dusky greenish of the crown. There are a few black feathers in the upper back. The scapulars, lower back, and rump are blue; part of the wing-coverts, quills, and tail-feathers black, and part

dusky, as in the female. Below the throat is black, while there are scattering black feathers over the ashy and ochraceous-buffy of the remaining lower parts.

*Euphonia gracilis.*

Four female examples of a *Euphonia*, collected in Pozo Azul (Pirris), Costa Rica, in December, 1888, by Mr. J. C. Zeledon, and labeled by that gentleman *Euphonia gracilis*, may be described as follows: Above olive-green with a strong bronzy-green sheen, more yellowish and less bronzy on the rump and upper tail-coverts; forehead and front part of crown rufous-chestnut; wings and tail blackish, with yellowish olive edges. Below greenish olive, yellowish on chin and throat; center of breast and belly tawny ochraceous, under tail-coverts yellowish orange-ochraceous, axillaries yellow.

This description differs markedly from any hitherto published, and I hesitated long before giving it. But in examining a number of young male birds (with only a little yellow on the forehead) that appeared to belong to either *gracilis* or *luteicapilla*, I endeavored to find a character that would separate the species at all ages. In examining the specimens I noted that in *gracilis* the dusky or black at the bases of the yellow feathers of the crown always extends farther along the shaft of the feather than along the web, making a V-shaped union between the yellow tip and darker base. This is most marked on the feathers farthest back on the crown, but is noticeable even on those on the extreme forehead. In *luteicapilla* the yellow tip joins the dusky base in a straight line across the feather. Usually, also, the yellow in *gracilis* is paler, confined more to the extreme tip of the feather, and the dusky base is blacker. This being noted, I found that all the young specimens pertained to *luteicapilla*. Then came Mr. Zeledon's specimens labeled *gracilis*. An examination of so-called females of *gracilis* and *luteicapilla*, and of published descriptions, seemed to point to their being indeterminate one from the other. It might here also be observed that in *gracilis* the bill is heavier and the gonys decidedly more convex than in *luteicapilla*.

The Zeledon birds, or female *gracilis*, are very distinct from *E. gouldi*; and while there is rather a close color resemblance to the females of *fulvicrissa*, the size is much greater, being equal to the males of *gracilis*. Males of *gracilis*, compared with those of *fulvicrissa*, are seen to have the same style of crown (the V-shaped union between the black base and yellow tip). All males of *fulvicrissa* examined have a white spot on the inner web of the outer tail-feathers, sometimes well defined and again only faintly indicated. Four out of the six males of *gracilis* have the white mark on the outer tail-feather.

I do not know what Mr. Zeledon's reasons were for identifying his specimens as *gracilis*, but he gave special attention to the *Euphonia*, and took both male and female in the same locality and at the same time.

Since returning to Costa Rica I have examined the Museo Nacional series of thirty *luteicapilla* and *gracilis*, including three additional females of *gracilis*, and am thoroughly convinced that female of *gracilis* has hitherto been unknown or confounded with some other form.

*Euphonia minuta*.

Seven adult males from Costa Rica compared with a single male (adult) from Sarayaen, Ecuador, are shaded with deeper orange on the yellow of the lower parts and forehead, while the Ecuador bird has the bill just appreciably larger.

*Ramphocelus costaricensis*.

In looking over the specimens of *R. passerinii* in the U. S. National Museum collection, I find a very good example of my recently described *R. costaricensis* (The Auk, January, 1891, p. 62). The specimen (No. 42863, U. S. National Museum collection, Navarro, Costa Rica, January, 1866, J. Cooper) agrees, as far as my memory serves me (having no examples at hand for comparison), with my type, being perhaps a trifle brighter on the breast, and the wings and tail more dusky brownish, or more like those of *passerinii*. The specimen was originally marked female (♀), but some one, at a later date, and with ink that has not yet faded, has drawn a line across this and written below "Juv. ♂."

Since returning to Costa Rica the Museo Nacional has received eight additional examples of this new form.

*Chlorospingus pileatus*.

I have two young birds in plumage hitherto undescribed. No. 5416, Museo Nacional de Costa Rica, Volcan de Irazú, April 23, 1891, is evidently just from the nest, as there is yet in the plumage some of the nestling down. Above it is light olive-brownish, wings and tail blackish, the latter with dull olive-yellowish edges; prevailing color of wing-coverts like the edges of the quills. Head black, crown bordered with a broad white stripe extending from just in front of the eye to the nape. Lores, supraocular stripe, and auriculars black. Below prevailing color grayish olive-buff, lightest in the center, with ill-defined blackish or dusky streaks; sides more uniform olive; chin, throat, and cheeks ashy whitish; bend of wing whitish. No. 3095, ♂ juv., Volcan de Poás, July 5, 1889, A. Alfaro, is a much older bird. Above brownish olive-green, wings and tail dusky, edged with the color of the back, slightly the brighter on the primaries; head black; many yellowish feathers in the whitish stripe on the sides of the crown. Below cheeks, throat, and breast olive-yellowish, with indistinct dusky striations; an indistinct dusky line along the sides of the throat, joining the auriculars posteriorly; sides, belly, and crissum dusky or brownish olive-greenish.

*Buarremon gutturalis.*

Guatemalan birds, compared with Costa Rican specimens, seem a trifle larger, especially a longer tail, and the yellow of the throat appears to extend farther down on the fore breast. However, the Guatemala skins are so lengthened in the making up it is difficult to judge.

*Dendroornis nana costaricensis* Ridgw.

An examination of a series of Costa Rican specimens compared with examples from Panama, including the types of *nana*, Lawrence (= *lawrencei* Ridgw.), kindly sent me for examination by Professor Allen of the American Museum of New York, are uniformly the larger (especially the bill), and certainly seem to me separable as a distinct race, although Mr. Elliot (*The Auk*, VII, 1890, pp. 174, 175) contends they are the same, remarking that "the slight difference in size to be noticed in a series of any species of this genus is evidently of no specific value." It may be very true that there is as great individual variation in the different species as between average Costa Rica birds and average Panama birds. But the smallest Costa Rican bird is slightly larger than the Panama birds (I must except a single evidently young bird), while the largest Costa Rica bird has the bill just 0.46 of an inch longer than the largest Panama example.

As to the distinctness of *nana* and *lawrencei* a comparison of the two type specimens shows them to be identical; an opinion in which Mr. Ridgway concurs, thus fully agreeing with Mr. Elliot. It should, however, be stated that in Mr. Lawrence's type of *nana* the tail feathers are not fully grown, being only 3.10 inches long, while in the bird on which Mr. Ridgway based his *lawrencei* the tail measured 4.36. There is a similar but lesser difference in the wings, measuring 3.60 and 4. Mr. Ridgway's example is in very perfect plumage, while the other is in a state of change. Mr. Ridgway says he was misled by the original measurements given in the description of *nana*. He did not have the bird for examination.

The uniting of *nana* and *lawrencei* changes the name of the Costa Rica bird from *lawrencei costaricensis* to *nana costaricensis*, as I have written it above.

The Costa Rican bird appears to reach its maximum development on the west coast.

*Myrmeciza stictoptera* Lawr.\*

A single male specimen of this exceedingly rare bird, No. 2335, Museo Nacional de Costa Rica, San Carlos, Costa Rica, December 25, 1888, A. Alfaro, compared with Mr. Lawrence's type, No. 34777, U. S. National Museum, Angostura, Costa Rica, agrees minutely with that bird. It is certainly a very distinct species, differing decidedly from *M. exsul* and its allies in having a concealed white dorsal patch, and from *M. lamasticta* in having the throat unspotted. Yet Mr. Selater, in Vol. xv, Cata-

\* See Ann. Lyc. N. H. of N. Y., vol. VIII, p. 132.



logue of Birds in the British Museum, in treating of the genus *Myrmeciza*, does not mention *stictoptera* even in his synonymy.

*Picolaptes compressus* (Sel.)

An examination of a series of thirty-three specimens taken from various points and altitudes on both the Atlantic and Pacific sides of the high interior of Costa Rica shows much individual variation in size and color; variations that seem to connect (very closely indeed) *compressus* with *gracilis*. I have not, unfortunately, the type of *gracilis* before me, but have carefully studied Mr. Ridgway's original description (Proc. U. S. National Museum, Vol. XI, p. 542) and also Mr. Selater's notes, taken from the type (Cat. Birds British Museum, xv, p. 154). From the appended table of measurements it will be seen that the variations in size are from: wing, 3.93 to 3.40; tail, 3.96 to 3.43; from nostril to tip of bill, 1 to 0.70; tarsus, 0.71 to 0.65. In arranging the table I separated the birds into four groups; the first from the central west coast region (Gulf de Nicoya). These prove to be slightly the largest and are as a whole a lighter brown (sepia) below; the paler markings vary from deep buff to buffy-whitish, the feathers of the throat usually narrowly bordered with blackish. Above there is no appreciable difference in color from birds from other localities.

The second group comes from the east side of the Cordillera, in nearly the same latitude as the first group and at an elevation of about 2,500 feet. The bill averages slightly smaller and darker horn-color. The coloration above and below is not to be distinguished from that of birds belonging to the first group. It will be noted that the two lots were taken at the same season.

The third group comes from the southwest coast region. They are intermediate in size, although slight the difference, between the first and second groups; they average slightly darker below, more of a bistre than a sepia brown. The bill is about as dark as in birds of the second group.

The fourth group is from the eastern side about the same latitude as the last. The birds of this group average decidedly the smallest; there are, however, only four of them. No. 5437, Museo Nacional de Costa Rica, is especially small. Above and below the brown is of a darker shade. The upper mandible is blackish, the lower horn-color for at least the basal half, the interior half being broken away.

The birds in the third group, from Pozo Azul, are from the same geographical region as the type of *gracilis* (Monte Redondo), but certainly can not be separated from other examples of *compressus*. I think anyone with my series of birds before them, and with only the *descriptions* of *compressus* and *gracilis* to guide them, would conclude that the color-differences were very slight, and that the relative measurements were hardly trustworthy characters.\*

The type of *gracilis* seems to have an unusually long tarsus.

\* See these Proceedings, vol. XIV, p. 475.

*Measurements of specimens of Picolaptes compressus.*

No. and sex.	Collector.	Locality.	Date.	Wing.	Tail.	Bill from nostril.	Tarsus.
2935	Alfaro and Cherrie	Majica	Mar. 13, 1889	3.92	3.83	0.98	0.71
4257	C. F. Underwood	Bebedero	Feb. 13, 1890	3.67	3.78	0.88	0.69
4758	do	do	Feb. 17, 1890	3.57	3.78	0.93	0.72
4139	do	do	Feb. 18, 1890	3.70	3.64	1.00	0.75
4160	do	do	Jan. 23, 1890	3.93	3.91	0.97	0.71
4161	do	do	Feb. 13, 1890	3.84	3.84	0.99	0.70
4162	do	do	Jan. 23, 1890	3.87	3.47	0.92	0.70
4493	do	do	Jan. 28, 1890	3.53	3.38	0.90	0.67
4494	do	do	Jan. 26, 1890	3.93	3.96	0.95	0.71
4495	do	do	Jan. 25, 1890	3.80	3.86	0.88	0.70
4496	do	do	Feb. 18, 1890	3.53	3.54	0.97	0.69
4497	do	do	Feb. 21, 1890	3.55	3.55	0.90	0.70
4499	Anastasio Alfaro	do	Jan. 24, 1890	3.4	3.49	0.92	0.70
4937	do	San Lucas	Feb. 14, 1890	3.68	3.54	0.86	0.70
5426	C. F. Underwood	Guayabal	Feb. 19, 1891	3.58	3.55	0.85	0.70
5427	do	do	Feb. 16, 1891	3.5	3.64	0.84	0.70
5428	do	do	Feb. 13, 1891	3.85	3.77	0.83	0.68
5429	do	do	Feb. 16, 1891	3.48	3.70	0.83	0.67
5430	do	do	Feb. 16, 1891	3.66	3.83	0.87	0.65
5431	do	do	Feb. 25, 1891	3.51	3.67	0.86	0.68
5432	do	do	Feb. 17, 1891	3.70	3.62	0.90	0.70
5433	do	do	Feb. 14, 1891	3.58	3.82	0.84	0.70
5440	do	do	Feb. 17, 1891	3.37	3.43	0.80	0.70
3321		Pozo Azul	Sept. 13, 1889	3.58	3.58	0.80	0.70
3322		do	Sept. 13, 1889	3.67	3.77	0.93	0.70
3323		do	Sept. 13, 1889	3.72	3.64	0.82	0.71
5433	C. F. Underwood	do	May 2, 1891	3.73	3.73	0.90	0.70
5434	do	do	May 12, 1891	3.46	3.53	0.85	0.70
5435	do	do	May 10, 1891	3.65	3.57	0.90	0.71
5425	A. Alfaro	Jimenez	Aug. 5, 1889	3.59	3.59	0.85	0.68
5436	do	do	Mar. 29, 1891	3.84	3.67	0.90	0.70
5437	Dr. C. L. King	Talamanca	Sept. 20, 1890	3.38	3.48	0.70	0.68
5441	R. Alfaro and Caranza	do	Feb. 21, 1891	3.44	3.44	0.83	0.67

*Philydor virgatus* Lawr.

A single specimen, No. 2332, collection of the Museo Nacional de Costa Rica (San Carlos, Costa Rica, December 22, 1888. A. Alfaro), agrees exactly with the type.

*Grallaria intermedia.*

A single specimen (No. 629, ♂, Museo Nacional de Costa Rica, Jiménez, April, 1886. A. Alfaro) agrees exactly with Mr. Ridgway's type. As stated by Mr. Ridgway (Proc. U. S. National Museum, VI, p. 406, *intermedia* "represents a very distinct form." readily distinguished by the lighter ochraceous of the breast, sides, flanks, and crissum; by the broad black striations on the breast; a distinct black rictal stripe, and rufous tips to the wing-coverts. From *perspicillata* it is easily distinguished by the lack of black streaks on the flanks.

*Grallaria dives.*

A young bird of this species has the head and back much darker than in adults, and a few feathers, evidently of the first downy plumage, are dusky chestnut. The wing coverts are faintly tipped with the same color. Below, the white of the middle of the belly and the throat is strongly washed with ochraceous.

*Ornithion imberbe?*

I brought a specimen with me that probably pertained to this species; but unfortunately while at the American Museum in New York it was carried away by a rat before I had opportunity to identify it.

*Tyranniscus parvus.*

Costa Rican specimens are intermediate in size between true *parvus* and *villissimus*; they are also more yellowish below than *parvus* from Panama. However, the relationship throughout seems the closer to *parvus*.

*Empidonax albigularis.*

I have a specimen that certainly does not agree very closely with Mr. Scater's description (Cat. Birds Brit. Mus., XIV, p. 223); however, compared with examples in the Smithsonian collection that differ in the same way, but which have been identified as *E. albigularis* by Mr. Scater, it is found that they agree.

*Contopus lugubris.*

A female in freshly assumes plumage, is much richer colored than any of the three examples, including the type, in the Smithsonian collection. Above and below it is much more of an olive. In size it is also a trifle smaller. The specimens in the Smithsonian collection are all in much worn plumage.

*Platypsaris aglaiaë (Laf.)\**

A single female, taken at Jiménez, in tierra caliente, on the Atlantic side of Costa Rica.

*Pachyrhamphus versicolor.*

A fine male, taken at La Palma de San José, Costa Rica.

*Pipra velutina Berl.*

Male Costa Rican specimen from Pozo Azul agree closely with Panama examples, but have a greenish shading on the rump and upper tail-coverts, and also below on the center of the belly, and decidedly developed on the under tail-coverts. This may, however, be a character of the young.

A female is parrot-green above, slightly brighter on the head and duller on the rump. There are three or four blue feathers in the crown. Below the breast is duller green, the throat greenish gray; the sides are paler, while the center of the belly and the crissum are greenish yellow.

\*Doubtless *P. a. obscura* Ridgw., recently described in these "Proceedings" (page 474).

The parrot-green color of the back readily distinguishes the females of this species from all others of the genus except *cyaneocapilla* and *suavissima*. The latter is distinguished by the lemon-yellowish belly.

*Pipra leucorrhoa*.

Females are bright olive or greenish above; below duller, grayish, or with a grayish shading on the throat, and yellowish on the belly. The axillaries are white or pale yellowish. Young males resemble females but have the throat white.

*Pipra leucocilla*

Females are bright olive-green above; entire head and nape slate-gray, with perhaps an olive shading; below duller, throat with grayish, crissum and belly with whitish or pale yellowish. Bill much larger than in *leucorrhoa*.

*Pipra mentalis*.

Females are dull olive-green above (almost the color so named in Ridgway's Nomenclature); below, more yellowish-olive on throat and breast; abdomen and crissum yellowish; axillaries pale yellowish, inner edges of quills edged with whitish.

*Trogon elegans*, Gould.

Four specimens were forwarded from Costa Rica for identification. Mr. Ridgway has classified the birds as *T. elegans*, Gould, thus making the tenth representative of the Trogonidæ found in Costa Rica. The first of these specimens was secured by Alfaro and Cherrie on the small island of San Lucas, in the mouth of the Gulf of Nicoya, in March, 1889. Mr. Alfaro has since secured a fair series of specimens from the same locality. This I believe extends the southern range of the species.

*Antrostomus vociferus* (Wils.).

A single specimen taken at San José (No. 2823, ♀, Museo Nacional de Costa Rica, San José, Feb. 24, 1889, Geo. K. Cherrie), and identified by Mr. Ridgway, proved to be this species, thus extending its southern range and adding another species to the list of Costa Rican birds.

*Coccygus minor* (Gm.).

This bird is found on both coasts of Costa Rica, and in the interior to an altitude of about 6,000 feet.

*Chloronerpes simplex*.

A single male from the Pacific side of Costa Rica (Pozo Azul), compared with an example from the Atlantic side, is decidedly smaller, and there are some color differences; however, with only the two examples before me I am not sure but that the variation is entirely individual.

*Melanerpes chrysauchen*, Salv.

(No. 3339, ♀, Museo Nacional de Costa Rica, Pozo Azul, Sept. 9, 1889, J. C. Zeledon). Mr. Ridgway identifies the above specimen as *chrysauchen*, adding another to the list of Costa Rican birds and extending the known northern range of the species.

*Accipiter tinus* (Lath).

Señor Don Anastasio Alfaro secured a very fine male specimen of this beautiful little hawk near Greytown, Nicaragua.